

Theory of electron plasma ...

numbers l, s, q_2 , and q_3 (l being the oscillator quantum number and q_1 being the wave vector component) and the normalized coordinate part of the wave function ψ_{l,s,q_2,q_3} are given by

$$w_{l,s,q_2,q_3} = q_1^2 + (2l+1)q_2 + 2s; \quad (3)$$

$$\psi_{l,s,q_2,q_3}(\mathbf{x}) = V^{-1/2} \exp(iq_1 x_1 + iq_2 x_2 + iq_3 x_3); \quad (4)$$

$$z_l(v) = \exp\left(-\frac{v^2}{2}\right) (2^l l! \sqrt{\pi})^{-1/2} H_l(v); \quad (5)$$

where H_l are Hermitian polynomials. With the Green function for free electrons in the magnetic field (ref. 1)

$$G_{\alpha\beta}^0(\mathbf{x}, \mathbf{y}) = \frac{e^{i\mathbf{p} \cdot \mathbf{z}}}{2(2\pi)^3} \exp\left(i\mathbf{p} \cdot \frac{\mathbf{x} + \mathbf{y}}{2} + i\mathbf{p} \cdot \mathbf{z}_1\right) \sum_{l=0}^{\infty} L_l\left(\lambda \frac{\mathbf{x}^2 + \mathbf{y}^2}{2}\right) \times$$

$$\int_{-\infty}^{+\infty} dq \exp[iq_3 z_0 - i w_{l,s}(q_3) z_0] \begin{cases} 1 - n_{l,s}(q_3), & z_0 > 0, \\ -n_{l,s}(q_3), & z_0 < 0. \end{cases} \quad (6)$$

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and $z_1 = x_1 - y_1 + E_{1,s}(q_3) = n \frac{(2l+1)^2}{ch} \exp -w_{1,s}(q_3)$; $L_1(v) = \exp(-v/2)L_1(v)$, L_1 - Laguerre polynomials, and the Green function for bosons characterizing the free electromagnetic field in nonrelativistic approximation: $D_0(z) = (z_0)/4 - z$, expressions are found for the mass operator. For weak H-fields and small l ($l \ll 1$) formula

$$M_l(q_3) = \text{Im} \left\{ \frac{4F(q_3)}{q_3} + 2[3l(2l+1)+1] \frac{q_3 - (1+2q_3^2)F(q_3)}{3q_3^3} - l^2(2l^2+2l+1) \frac{3q_3 + 2q_3^3 - F(q_3)(4q_3^4 + 4q_3^2 + 3)}{2q_3^3} \right\}. \quad (17)$$

$$, F(z) = \exp(-z^2) \int_0^z \exp(u^2) du.$$

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is found, for $1 \ll q$ and small λ , $x_1 = \frac{1}{2} x_2 + \frac{\lambda}{2}$. With $q =$
 $= q_1^2 + (21 \cdot 1)$.

$$M_1(q_3) = \frac{4F_1(Q)}{Q} + 2 \cdot 3 \cdot \frac{Q-1}{Q} + \frac{2Q^2 F_1(Q)}{Q} \quad (20)$$

is obtained, which for large q passes over to $M_1(q_3) = \frac{2}{q^2} - \frac{2}{q^4} - \frac{\lambda^2}{3q^4}$.
 For the total fermion Green function

$$G_1(q_0, q_3) = \frac{1}{(2\pi)^3} \left\{ \frac{1}{q_0 - w_1(q_3) - (2\pi)^3 M_1(q_3) - i\epsilon} + \right. \\ \left. + \frac{1 - n_1(q_3)}{q_0 - w_1(q_3) - 2\pi^3 M_1(q_3) - i\epsilon} \right\} \quad (29)$$

is obtained after some calculations, where the quantities being small in

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Theory of electron plasma in the....

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second order are neglected. For the correction to the thermodynamic potential one finally obtains, using the correction formula

$$\Delta \Omega = -i \int dx \int dy \lim_{\epsilon \rightarrow 0} \int_{x_0}^x \frac{dy'}{y'} \epsilon(x_0) Sp[M(x, y) G(y, x')]. \quad (31)$$

$$\Delta \Omega = -n^2 \mu^2 \frac{\text{ch } 2\epsilon}{2 \text{ch } \epsilon} \frac{\ln(\sqrt{1+\text{ch } \epsilon} + \sqrt{1+\text{ch } \epsilon} - 1)}{\sqrt{1+\text{ch } \epsilon} + \sqrt{1+\text{ch } \epsilon} - 1}. \quad (36)$$

In weak fields ($\epsilon \ll 1$, for $H = 10^4$ oe $\epsilon = 0.015$ and $\epsilon = 0.075$), $\Delta \Omega = -Vn \frac{\mu^2}{2} \epsilon^2 = -\frac{2}{9} \frac{\mu^2}{2} \epsilon^2$ is valid by approximation; this can be easily transformed into the usual parameters. Thence, one easily obtains for the correction $\Delta \chi$ to the magnetic susceptibility of the system: $\Delta \chi = -\frac{\mu_B^2}{2kT} \frac{kT}{kT} \frac{2}{9} \frac{m_0^2}{m^2} = \dots$. V. L. Bonch-Bruyevich is thanked for ad-
Card 6,7

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29690

U.S. GOVERNMENT PRINTING OFFICE
1970 2078

Effect of impurities on the...

$n_0 = 10^{17} \text{ cm}^{-3}$ of p Ge. The following holds for the mass operator in coordinate representation:

$\Gamma_{x,y} = -\langle V|xV|y \rangle \langle x|y \rangle \equiv -\int dx' y' G(x,y) \delta(x-x') \delta(y-y')$, where $\langle x|y \rangle$ is the total Green function, averaged over all impurity configurations.

$V = \langle V \rangle + V'$, $x = \{\vec{x}, x_0\}$, $y = \{\vec{y}, y_0\}$, $x_0 = y_0 = 1$. A Fourier transformation is performed to calculate $\Gamma_{x,y} = \int d\vec{k} d\vec{k}_0 \Gamma(\vec{k}, \vec{k}_0) \phi(\vec{k})$;

$\phi(\vec{k}) = n|V(\vec{k})|^2$. The following relation is satisfied:

$M(\vec{k}, k_0) = -\left(\frac{n}{2\pi m}\right) \int d\vec{k}' d\vec{k}_0' G(\vec{k}-\vec{k}', k_0-k_0') \sigma(\vec{k}')$, where $\sigma(\vec{k}')$ denotes the scattering cross section of an electron scattered elastically by an impurity center, $\hbar\vec{k}$ being transferred in the process. The dispersion

equation for $M(\vec{k}, \omega)$ reads: $\text{Re} M(\vec{k}, \omega) = \frac{1}{\pi} \int_{-\infty}^{\infty} d\omega' \frac{\text{Im} M(\vec{k}, \omega')}{\omega' - \omega} = M(\vec{k}, \omega)$;

analytic everywhere in the complex plane of ω , except on the real axis. The carrier spectrum is described by the function

$\chi(\omega) = \frac{1}{\pi} \int_{-\infty}^{\infty} d\omega' \frac{\text{Im} \chi(\omega')}{\omega' - \omega} = \chi(\omega)$;

analytic everywhere in the complex plane of ω , except on the real axis.

Carroll

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Effect of impurities on the...

$I(\vec{k}, k_0) = 2 \left[1 + e^{\beta(hk_0 - u)} \right]^{-1}$. $\text{Im} \Delta(\vec{k}, k_0)$, (23), where $\beta = 1/(kT)$, u is the Fermi level, $k_0 = \omega' - i\omega''$. The dispersion equation is obtained by putting the denominator of $\text{Im} \Delta(\vec{k}, k_0)$ equal to zero, and the solution in the case of a slight attenuation $|\omega''| \ll |\omega'|$ reads:

$$h\omega' - W_k - nV_0 - \text{Re} M(\vec{k}, \omega') = 0, \quad (23)$$

$$h\omega'' = \frac{\lim_{\omega'' \rightarrow +0} \text{Im} M(\vec{k}, \omega' - i\omega'')}{1 - \frac{\partial \text{Re} M(\vec{k}, \omega')}{\partial h\omega''}}. \quad (24)$$

(23) gives the corrections to the spectrum for interaction between the carriers and impurity centers. (24) gives the attenuation of a "single-particle" state with momentum $h\vec{k}$. The mass operator may be calculated from (17) and (20). For the case of thermal energies, and disregarding attenuation, one may write $\Delta(\vec{k}) \approx \text{const} k^2$, where W_k denotes the

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effect of impurities on the...

unperturbed electron energy, calculated from the bottom of the conduction band. As can be seen, the result is a change in the dispersion equation. To give an accurate indication of the corrections to the energy spectrum $\omega'(k)$ the screened potential V' was determined in

Debye approximation. Thus, $\Delta \epsilon_k = \epsilon_p n T_0 / 2 \pi k^2$, where $\epsilon_p = \frac{m e^4}{2 \pi \epsilon \hbar^2}$.

If $T \rightarrow 0$, the electron distribution function will be:

$$n_e = \frac{\int_0^\infty \zeta(E) dE}{\int_0^\infty \frac{e^{-(E-\mu)} + 1}{2} dE}, \text{ where } \zeta(E) = \frac{2}{\pi} \int_0^\infty k \text{Im} G(\vec{k}, E) d\vec{k} \text{ is the "state density".}$$

If there is attenuation, an essential requirement is that the energy range, where $\zeta(E) \neq 0$, shall not coincide with the spectrum $\hbar \omega'(k)$. The following relations hold for the effective occupation number N_c in the conduction band in the nondegenerate case, for thermal energies and for $n_e = n$:

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$$N_s = 2 \left(\frac{2\pi m^* kT}{h^2} \right)^{1/2}, \quad (64)$$

$$m^* = m \left\{ 1 + 0.027 \frac{\hbar \omega_0^2}{kT a_B} - 0.0094 \frac{(\hbar \omega_0)^2}{(kT)^2 a_B} + 0.075 \left(\frac{\hbar \omega_0}{a_B kT} \right)^{1/2} + \right. \\ \left. + 0.025 \left(\frac{\hbar \omega_0}{a_B kT} \right)^{1/2} \right\}. \quad (65)$$

$$a_B = \frac{\epsilon \hbar^2}{m e^2}, \quad \lambda_T = \frac{h}{\sqrt{\pi m kT}}, \quad \omega_0 = \left(\frac{4\pi n e^2}{\epsilon m} \right)^{1/2}. \quad \text{There are 9 references:}$$

2 Soviet and 7 non-Soviet. The three most recent references to English-language publications read as follows: V. L. Bonch-Bruyevich, Sh. M. Kogan, Ann. of Phys., 2, 125, 1960. - V. Kohn, J. M. Luttinger, Phys. Rev., 108, 590, 1957. - Edwards, Phil. Mag., 33, 1020, 1958.

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Card 5/6

Effect of impurities on the...

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B111/B138

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V.
Lomonosova (Moscow State University imeni M. V.
Lomonosov)

SUBMITTED: May 12, 1961

Card 6/5

24 7100 11035, 1043, 1055,

1972: Content: Political reporting in London, 1972-1973

ИЗДАНИЕ: Физика твёрдого тела, т. 3, кн. 1, 1966, 114-115

1. V. L. Gerasimovich and M. M. Kaban, FIZ. T. 1, No. 1, 1961, and Gerasimovich and Mirman, FIZ. T. 1, No. 1, 1961 have obtained the screened potentials by the Green functions method. Their results are necessary to determine the Coulomb potential screening in a semiconductor electron gas by the same method. In this problem the electron and is, for example, and for the lattice field effective electron mass m^* replace m , ϵ_0 is the dielectric constant. Positive charges are uniformly distributed and electron concentration n is given and constant. In this case, screening is independent of equilibrium. The temperature

where ϵ_0 is characterized by the condition $\frac{\epsilon_0}{\epsilon_1} = 1 + F$ (Fig. 1, a), ϵ_1 - bottom of conduction band. The point ϵ_0 is represented

3. 1. 1.

potential screening effect.

the coordinate plane, the potential at a point r is given by

$$\Phi(r) = \frac{Ze}{r} - 2 \int_0^\infty \frac{\sin kr}{k} f(k) dk \quad (1)$$

with

$$f(k) = \frac{k_0^3}{k^3} \exp\left(-\frac{k^2}{4k_0^2}\right) \int_0^{\frac{1}{2}} \exp(u^2) du = 1,$$

$\frac{Ze}{r}$ is the binding constant; $k_0 = \sqrt{\frac{4\pi e^2 N}{m}}$ the plasma frequency, and

$\frac{1}{k_0^2} = \frac{1}{4\pi e^2 N}$ the "thermal" wave number. For Ge with $N = 0.1 \times 10^{21} \text{ cm}^{-3}$, $k_0 = 1.4 \times 10^6 \text{ cm}^{-1}$, $\lambda_0 = 1.4 \times 10^{-6} \text{ cm}$, $\lambda_0^2 = 1.96 \times 10^{-12} \text{ cm}^2$. For Ge , λ_0^2 is

at liquid-nitrogen temperature $\lambda_0^2 = 1.96 \times 10^{-12} \text{ cm}^2$. For Ge , λ_0^2 is also smaller for $\frac{m_e}{m} < 1$, $\frac{m_e}{m} = \frac{0.51}{0.94} = 0.54$. For

at nitrogen temperature this is valid for all $N < 10^{21} \text{ cm}^{-3}$.

Carl J.

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 250 million to 450 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

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(2)

1. $h = 0.1$ m

(3)

(5)

$$C_4 = \begin{matrix} & & 2 \\ & & 4 \\ 3 & + & 2 & + & 1 \end{matrix}$$

3.

On the other hand, for $k \rightarrow \infty$, ...

3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

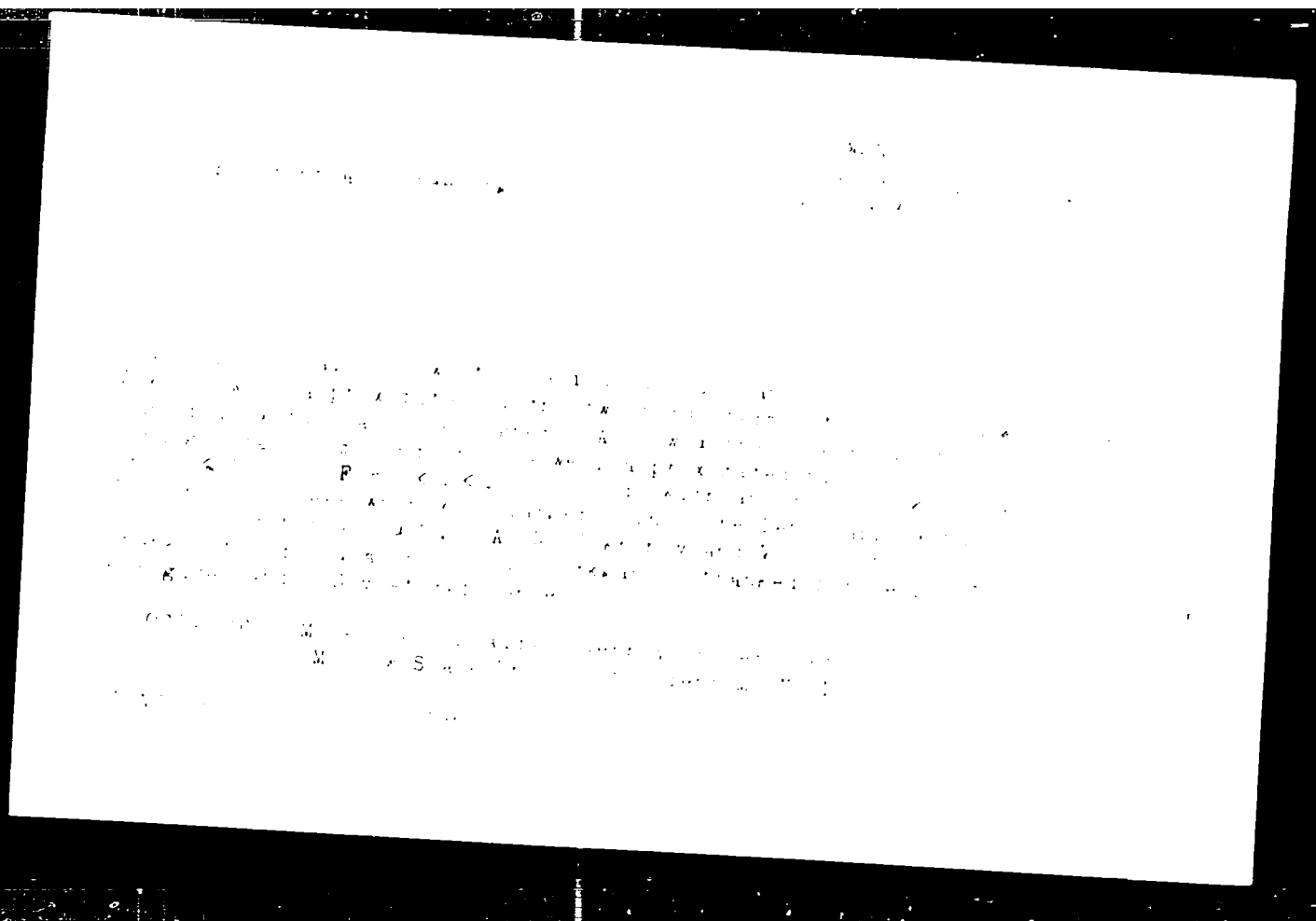
... in the region $0 < \arg z < \pi$, $\frac{1}{z} F(z) = 0$, which has no roots. In detail, it can be seen that, in the imaginary axis ($\arg z = \pi/2$), it has two roots z_1, z_2 for small $\alpha > 0$. At $\alpha_0 = 4.11$, $z_1 = z_2 = 1.17$, it has no real roots left. In the remaining region ($\arg z \in [0, \pi/2]$), it can be numerically solved, the complex roots are given by

$$\left. \begin{aligned} \rho_k &= \rho_k^0 \left\{ 1 + O\left(\frac{\ln k}{k}\right) \right\}; \\ \varphi_k &= \frac{\pi}{4} + \varphi_k^0 \left\{ 1 + O\left(\frac{1}{k}\right) \right\}, \\ \rho_k^0 &= \sqrt{\pi} \left(2k + \frac{3}{4} \right)^{-1/2}, \\ \varphi_k^0 &= \frac{3 \ln \pi \left(2k + \frac{3}{4} \right) - \ln \left(\frac{\pi \sqrt{\pi}}{16} \right)}{4\pi \left(2k + \frac{3}{4} \right) - 2\pi \left(2k + \frac{3}{4} \right)}. \end{aligned} \right\} \quad (9)$$

$$\lim_{k \rightarrow \infty} \rho_k = 0, \quad \lim_{k \rightarrow \infty} \varphi_k = \frac{\pi}{4}.$$

Now the potential (1) can be given as

where



MIRONOV, A.I.

VINOGRADOV, V.M.; MIRONOV, A.I.; BRAYLOVSKIY, N.G., inzhener, redaktor
VERINA, G.P., tekhnicheskii redaktor.

[Progressive practices in the repair of brake equipment. work practice of
the automatic-brake control point at Lyublino station on the Moscow-Kursk-
Donets Basin line] Peredovoi metod remonta tormoznykh priborov. Opyt
kontrol'nogo punkta avtotormozov stantsii Liublino Moskovsko-Kursko-Don-
basskoi dorogi. Moskva, Gos. transportnoe zheleznodorozhnoe izd-vo, 1954
111 p. [Microfilm] (MLRA 7 12)
(Air brakes)

SOLITERMAN, Ye.S.; MIRONOV, A.I.

Avoiding warping of press plates. Der.prom. 5 no.3:21 Mr '56.
(MIRA 9:7)

1. Kuybyshevskiy mebel'nyy kombinat.
(Kuybyshev--Veneers and veneering)

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S/179/60/00004/016/027
E081/E141

AUTHORS: Mironov, A. I. and Subbotin, M. I. (Moscow)

TITLE: Damping of Accelerometers with Increased Natural Frequency q

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 4, p 132

TEXT: The paper is a continuation of previous work (Refs 4, 5). An accelerometer is described with natural frequency up to 500 c/s damping being achieved by using a liquid of relatively high viscosity, up to 30 stokes. Sections of the instrument are shown in Fig 1. The elastic element 1 is a steel plate working in bending, clamped to a steel base 3. The inertial mass 2 is also a steel plate moving in a slot in the case 4. The damping fluid used is polymethylsiloxane which has a relatively small temperature coefficient of viscosity, the viscosity falls by a factor of 2.2 for a temperature change from 0° to 40 °C. Two accelerometers have been made with natural frequencies of 170 and 510 c/s. In the first the viscosity of the liquid is 11 stokes, and in the second, 29 stokes. The gap in both is 0.15 mm. Fig 2 shows the damping

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E081/E141

Damping of Accelerometers with Increased Natural Frequency
at 170 c/s (a) and at 510 c/s (b). The accelerometers are
applicable to measuring linear and angular accelerations. The
accelerometers described in the paper were produced by the
Laboratory of Machine Dynamics, IMASH, Academy of Sciences USSR
There are 2 figures and 6 references: 1 German and 5 Soviet.

SUBMITTED: April 1, 1960

Card 1/2

MIRONOV, A.I.

Column with grid-type plates for benzene hydrocarbon desorption from coal tar absorbing oil. Koks i khim. no.3:33-34 '63. (MIRA 16'3)

1. Shcherbinovskiy koksokhimicheskiy zavod.

(Hydrocarbons)

(Coal tar products)

(Plate towers)

MIRONOV, Prof. A. I.

Moscow Otlast Sci. Res.

Clinical Inst., -1942-49.

Prof., Moscow Otlast Hospital for Invalids of World War
II, and 1st Surgical Clinic,

"A Case of the Removal of a Late Discovered Nodule

Fragment from the Celiac Cavity," Khirurgiya, No. 3,

1942;

"Clinical Aspects and Treatment of Latent After-Effects
of Chest Traumata," Sov. Med., No. 3, 1949.

• • • • •

Technique tended to peak and was significantly different from the other techniques ($F_{(2,10)} = 6.77, p < 0.05$).

* *Journal of the American Academy of Child and Adolescent Psychiatry*, 1999, 38(12):1363-1370.

MIRONOV, A., professor.

The nurse. Sov.kras.krest 4 no.1:9 Ja-Mr '54. (MLRA 7:4)

1. Glavnyy khirurg Moskovskogo gorodakogo otdela zdravookhraneniya.
(Nurses and nursing--Study and teaching)

MIRONOV, A.I., professor

Results of operative therapy of strangulated hernias. *Khirurgiia*
no.9:32-36 S '54. (MLRA 7:12)

1. Glavnyy khirurg Moskovskogo gorodskogo otdela zdravookhraneniya.
(HERNIA, INTERNAL, complications,
strangulation, surg.)

MIRONOV, A.I.

Forensic medicine in ancient China. Sud.-med. report, 4 no. 3, 1961.
48 J1-S '61. (CHINA-MEDICAL JURISPRUDENCE) (CHINA-MEDIC)

ACCESSION NR: AP5007217

5/0286/65/000/001/0113/0113

AUTHOR: Pashkhenov, A. A.; Baylakov, K. P.; Makharinkiy, Ye. G.; Smyslov, V. I.;
Khrenov, A. H.; Smirnov, A. A.; Mirnov, A. K.; Pudryayev, V. V.

TITLE: A method for manufacturing pipes and similar articles from laminated
plastics. Class B0, No. 168169

SOURCE: 'Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 113

TOPIC TAGS: thermosetting plastic, glass fabric, laminated plastic, plastic technology

ABSTRACT: This Author's Certificate introduces a method for manufacturing pipes and similar articles from laminated plastics. The process consists of winding some such material as resin-saturated glass fabric on a mandrel and heating (e.g. with hot rollers). Liquid thermosetting resins which do not contain volatile solvents are fed continuously to the mandrel during the winding and heating process. This is done to make the completed article airtight.

ASSOCIATION: none

Card 1/1

Miner A.K.

USSR Cultivated Plants - Grains.

L-2

Ats Jour : Ref Zhar - B110 100. N 100. 20. Aug. 1961. 192005

Author : Mironov, A.K.

Inst

[illegible]

Orig. Pa. S. Zh. Povolzh'ya. 1956, N 1, 6-7

At present Kharabainok has been tested in several (Astrakhan, Volgograd) districts. It is planted in the spring and in the fall. It is a very early maturing variety. It is planted in the last years of a yearly plan for the production of grain. The most useful were Krasnodarsky, 424 and Alakulsky varieties. Other specimens under test. Conditions show a tendency to sprouting in the autumn towards the end of the year.

Carl

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6256

Author : Mironov, A. K.

Inst : Not given

Title : Experimental Cultivation of Sorghum in
Stavropol'ye

Orig Pub : Materialy po isuch. Stavropol'sk. kraya,
vyp 8, 1956, 43-59

Abstract : Data, supplied by variety trial plots,
scientific research, institutions, as well
as by kolkhozes and sovkhozes cultivating
sorghum on large areas, showed that in dry
regions, on salted soils, and in dry years, the
yield of sorghum exceeds that of corn. Of
particular significance was 1955 - a dry year,

Card 1/2

33

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6256

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R0011

when sorghum was the only crop, which produced
grain, green mass and silage in some region.
Good results were obtained by cultivating
sorghum in the Manych pastures, where yearly
precipitation is 150-200 mm. The biology and
the agrotechny pertaining to sorghum are
described. The best varieties for Stavropol'ye
are: Karlikovaya Dzhugara 185 [dwarf milo],
Ranniy Yantar' Dnepropetrovskiy, Orazhevoye
450, Krasnyy Yantar' 271/585, Stavropol'skiye
98. -- N. N. Kulachov

Card 2/2

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M

[illegible]

10.

1. The first group of people who are interested in the results of the study are the researchers themselves. They want to know if the study was successful in achieving its objectives and if the results are consistent with their expectations.

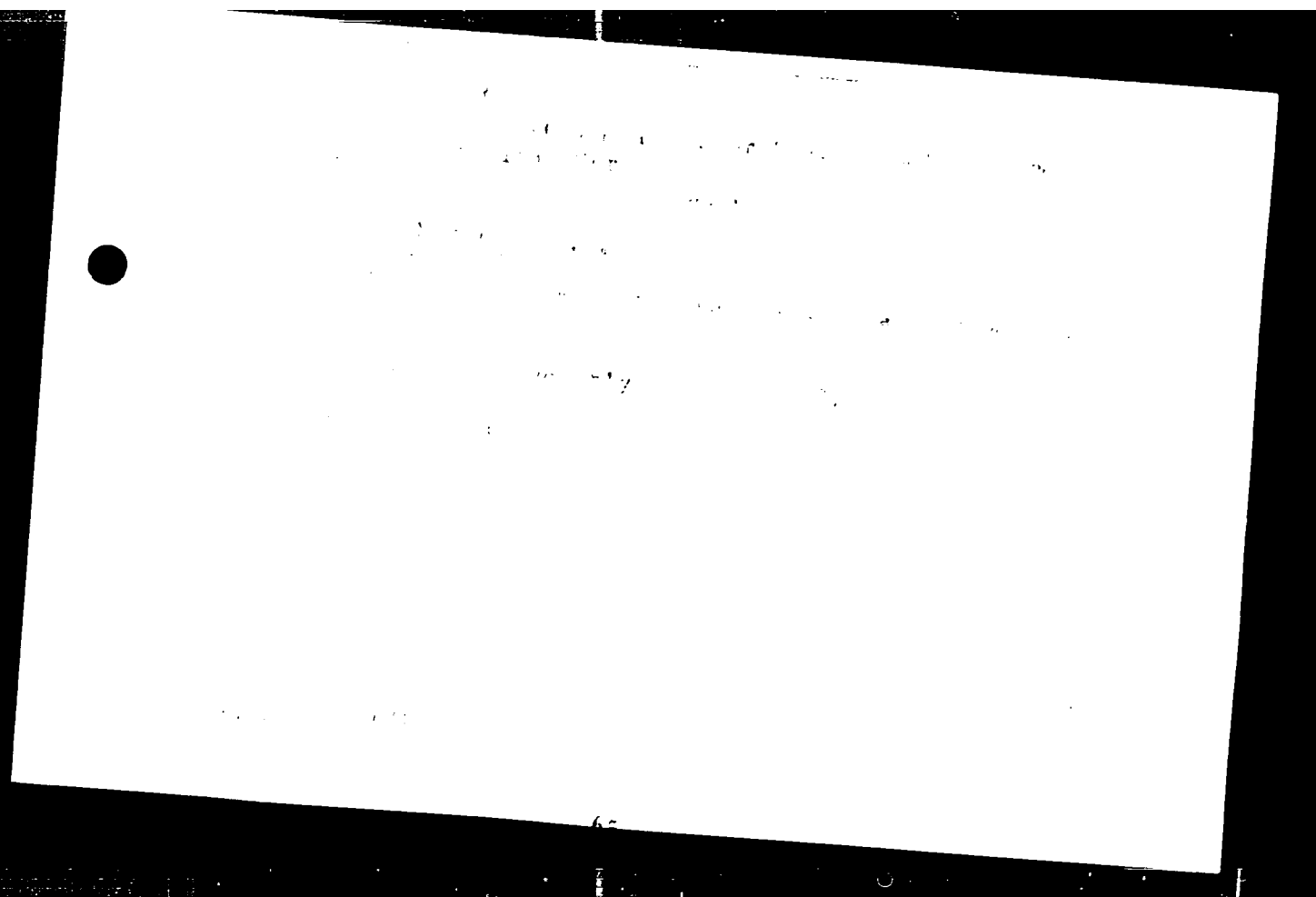
100-443887-1, 2, 3

[illegible]

1/1

"APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134



APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134

L 27264-66 EWP(j)/EWT(m)/ETC(m)-6/T IJP(c) RM/WW
 ACC NR: AP6009532 SOURCE CODE: UR/0413/66/000/005/0067/0067

AUTHORS: Makharinskiy, Ye. G.; Smyslov, V. I.; Mironov, A. K.

ORG: none

TITLE: Device for winding fiber glass pipes. Class 39, No. 179460

SOURCE: Izobreteniya, promyshlennyye obraztsey, tovarnyye znaki, no. 5, 1966, 67

TOPIC TAGS: fiberglass pipe, glass manufacturing machinery

ABSTRACT: This Author Certificate presents a device for winding fiberglass pipes. The device has a cylindrical fixture with the axis resting on bearings mounted on the frame of the device and connected to the drive through a universal joint which rotates the fixture. It also has upper clamping rollers which contact the outer cylindrical edges of the fixture and a lower support shaft which contacts the outer surface of the tube along its entire length. To improve the physical and mechanical characteristics of the pipes, the movable bearings supporting the fixture axis are mounted in vertical guides in the frame.

SUB CODE: 13/ SUBM DATE: 27Feb64

Card 1/1 CC

UDC: 678.5:621.778.27:62-462

L 43832-66 ENT(m)/ENT(i)/T LJP(c) WH/RM
 ACC NR: AP6030597 (A, N) SOURCE CODE: UR/0413/66/000/016/0090/0090
 INVENTOR: Makharinskiy, Ye. G.; Smyslov, V. I.; Mironov, A. K.; Shakhov, V. A.;
Dimitriyenko, I. P.; Suminov, V. I.; Avdeyev, V. A.
 ORG: none
 TITLE: Production process for cylinders of laminated plastics. Class 39, No. 185046
 [announced by the Independent Special Design and Technical Bureau (Samostoyatel'noye
 spetsial'noye konstruktorsko-tekhnicheskoye byuro); State Scientific-Research
 Institute of Plastics (Gosudarstvennyy nauchno-issledovatel'skiy institut
 plasticheskikh mass)]
 SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 90
 TOPIC TAGS: reinforced plastic, laminated plastic
 ABSTRACT: An Author Certificate has been issued for a production process for
 laminated plastic cylinders involving the winding of a pre-impregnated and dried
 strip of filler onto a rotating mandrel and molding of the laminated material. To
 enhance the mechanical strength of the cylinder walls, the molding is carried out by
 pressing between the mandrel and a heated roll. (SM)
 SUB CODE: 11/ SUBM DATE: 14Jul64/ ATD PRESS: 5072
 Card 1/1 UDC: 678.027.2

KONSTANTINOV, M.I., Inzh.; MOKSHIN, A.I., Inzh.; PUPKOV, V.I., Inzh.;
ARSHAKOV, M.I., Kadm. tekhn. nauk; AN, Yel. ...
Inzh.; MIRONOV, A.I., Inzh.; (S) V, ...

Studying the performance of pin roller type in strip ...
ways of improving their design. Gor. z ar. no. 12-4 ...

...
...
Moskva.

MITRONOV, A.M.

Technology

(Natural retting of southern hemp, ramie hemp, jute, and Chinese bell flower. Moscow, Gizlepprom, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1951 INDIA 111111.

BIRYUKOVA, L.V.; OVCHARENKO, V.G.; MIRONOV, A.M.; KARABAYEV, A.A.

Testing atomizers and sprinklers used for spraying in absorbers.
Khim. prom. no.6:464-468 Je '63. (MIRA 16:8)

1. Vsesoyuznyy alyuminiyevo-magniyevyy institut i Solikamskiy
magniyevyy zavod.

(Absorption)

(Spraying and dusting equipment—Testing)

EYDES, Iosif Grigor'yevich; MIROMOV, Arkadiy Mikhaylovich; ARKHIPOV, G.O.,
otvetstvennyy redaktor; ALEKSEYEVA, M.N., redaktor; KONTOROVICH, A.I.,
tekhnicheskii redaktor

[Technology of manufacturing parts of instruments and radio equipment]
Tekhnologiya izgotovleniya detalei priborov i radioapparatury. Lenin-
grad, Gos. soiuзное izd-vo sudostroit. promyshl., 1956. 482 p.
(Instrument industry) (Radio industry) (MLRA 10:4)
(Machine-shop practice)

MIKONOV, A M

PHASE I BOOK EXPLOITATION

SOV/3585

Eydes, Iosif Grigor'yevich, Liliya Yakovlevna Vyshkind, Gennadiy Osipovich Arkhipov, and Arkadiy Mikhaylovich Mironov.

Tekhnicheskii kontrol' detaley i priborostroyeni (Inspection of Parts in the Instrument Industry) 2d ed., rev. and enl. Leningrad, Sudpromgiz, 1959. 520 p. 1,800 copies printed.

Scientific Ed.: S. A. Mayorov; Ed.: M. A. Antekman; Tech. Ed.: A. I. Kontorovich.

PURPOSE: This book is intended for technical personnel in the instrument and shipbuilding industries. It can also be used by students of *tekhnikums* and schools of higher education specializing in instrument manufacture.

COVERAGE: The book describes measuring and inspection methods for typical metal parts of instruments. A description of testing methods for metals and the principles of maintaining unity of measures are presented. No personalities are mentioned. There are 57 references, all Soviet.

TABLE OF CONTENTS:

Preface to the Second Edition

~~Introduction~~

6

MIRONOV, A.N., assistant

Filling defect of the stomach caused by pressure of the splenic artery. Vest.khir. no.9:126 '61. (MIRA 1963)

1. Iz gosspital'noy khirurgicheskoy kliniki (zav. - prof. A.M. Aminev) Kuybyshevskogo meditsinskogo instituta.

(STOMACH - DISEASES)

(SPLENIC ARTERY--ABNORMALITIES AND DEFORMITIES)

MIROMOV, A.N.

Late results of surgery in relaxation of the diaphragm.

Khirurgiia 37 no.5:128-129 My '61.

(MIRA 14:5)

1. Iz kliniki gosspital'noy khirurgii (zav. - prof. A.M. Aminev)
Krybyshevskogo meditsinskogo instituta.

(DIAPHRAGM---SURGERY)

SHAPIRO, David Moiseyevich; PRIKHOD'KO, Aleksandr Nikolayevich;
PODOBYANOVA, Alevtina Ivanovna; MIRONOV, Aleksandr Nikitich;
SHELKOV, N.I., red.; GRIGORCHUK, L.A., tekhn. red.

[Collected problems on the strength of materials] Sbornik zadach po soprotivleniiu materialov. Moskva, Gos. izd-vo
"Vysshiaia shkola," 1961. 209 p. (MIRA 15:2)
(Strength of materials—Problems, exercises, etc.)

MIRONOV, A.N., kand.tekhn.nauk; KOVALEVSKIY, M.P., red.; GEL'MAN, D.Ya.,
red.; LABUS, G.A., tekhn.red.

[Sausage casings] Kishchnoe syr'e. Pod red. M.P.Kovalevskogo.
Moskva, Gos.izd-vo tekhn.i ekon.lit-ry po voprosam zagotovok,
1950. 46 p. (MIRA 12:3)

(Sausage casings)

МІРІНОВ, А. Н.

Poultry Gor'kiy (Province)

Raising chickens on collective farms of the Piliha District. *Iskustvo*, 1, No. 2, 1952.

9. Monthly List of Russian Accessions. Library of Congress. June 1952 Incl.

MIROMOV, Aleksandr Nikolayevich, professor; KRIVYAKIN, B.I., redaktor;
GILSON, P.G., tekhnicheskii redaktor.

[Slaughtering of livestock and carcass processing] Udoi skota i
razdelka tush; rukovodstvo dlia rabotnikov skotoboinykh punktov,
boenskikh ploshchadok i podvornykh zaboishchikov skota. Moskva,
Izd-vo tekhn. i ekonom. lit-ry po voprosam zagotovok, 1954. 111 p.
(Slaughtering and slaughterhouses) (MIRA 8:4)

MITROV, A.F.

Mironov, A.F., Secretary, Veterinary Dept, Ministry of Agriculture.

"Treatment of Cattle with Lysol Solution in Anthrax,"

Vet, Vol 31, 1924, 1924. pp 15-7.

USSR / Diseases of Farm Animals. Diseases Caused
by Helminths.

R-2

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7361

Author : A. N. Mironov, K. G. Malyshev, V. I. Krovyakov
Inst : Not Given
Title : Susceptibility of Fur Bearing Animals to Trich-
inosis.

Orig Pub: Karakulevodstvo i zverovodstvo, 1956, No 6, 42.

Abstract: It is shown that silver-black foxes and polar
foxes become infected with trichinosis when fed
with contaminated meat. In this connection
recommendations are given for the prophylaxis of
trichinosis.

Card 1/1

46

MIRONOV, A.N., prof., doktor vet. nauk

Results and tasks in veterinary sanitary inspection of meat, milk, and fish. Trudy VNIIVSE 12:323-334 '57. (MIRA 11:12)

1. Laboratoriya vetsanekspertizy Vsesoyuznogo nauchno-issledovatel'skogo instituta veterinarnoy sanitarii i entoparazitologii.
(Veterinary hygiene) (Food adulteration and inspection)

MIRONOV, A.N., prof., doktor vet. nauk

Work of Professor V.IU.Vol'ferts in the field of veterinary sanitation. Trudy VNIIVSE 12:335-340 '57. (HIRA 11:12)

1. Laboratoriya vetsanekspertizy Vsesoyuznogo nauchno-issledovatel'skogo instituta veterinarnoy sanitarii i ektoparazitologii.

(Vol'ferts, Valerian Iul'evich, 1874-1946)

(Veterinary hygiene) (Food adulteration and inspection)

MIRONOV, A.N., prof.

All-Union Conference on Veterinary Inspection of Meat, Milk, Fish
and Other Food products. Veterinariia 35 no.10:64-65 O '58.

(Food adulteration and inspection)

(MIRA 11:10)

MIRONOV, A.N., prof.

Veterinary sanitary standards for slaughterhouses. Veterinariia
38 no.6:73-76 Je '61. (MIRA 16: 9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy
sanitarii.

(Slaughtering and slaughterhouses)

SPHENNICK, Steven L. (b. 1944), ...
retirement, ...
S.F., Cal.

(Veterinary Assistant ...
enterprises, Veterinary ...
representative ...
Hollywood, California.

SHAPIRO, David Moiseyevich; PODORVANOV, Alevtina Ivanovna;
MIRONOV, Aleksandr Nikitovich; BOCHAROVA, Yu.F., red.

[Collection of problems on the strength of materials]
Sbornik zadach po soprotivleniiu materialov. Izd.2.,
perer. Moskva, Vysshaia shkola, 1965. 359 p.
(MIRA 18:9)

SEATTLE, April 24 (AP) — The Seattle Police Department has announced that it has received information that a person has been identified as the person who shot and killed a police officer in the city of Seattle.

89003

9.6180

10 9230

S/119/61/000/001/007/C13
B019/B067

AUTHOR: Mironov, A. P.

TITLE: Some Problems of the Production of Wire Converters

PERIODICAL: Priborostroyeniye, 1961, No. 1, pp. 17 - 18

TEXT: The author describes wire strain gauges without transverse sensitivity, which offer great advantages as to their production. The sensitive grid of these converters consists of parallel wires which are connected to a circuit by means of copper or brass bridges. The grid is fastened to paper or kept together by varnish. It appears as a narrow strip which, according to its application, can be cut into individual pickups. The automatized production method was developed at the NIKIMO. An automatic machine fastens the wires to a paper tape by means of celluloid the bridges are fastened by a special device. The author also describes a test device for the calibration of the converters. The converters are fastened to a beam with a constant cross section which can be bent. The bending of this beam can be measured by special measuring instruments.

Card 1/2

89003

Some Problems of the Production of
Wire Converters

S/112/61/000/001/007/013
B012/B067

There are 3 figures.

Card 2/2

LOYTSKER, B.R.; MIRONOV, A.P.

Methods for testing dynamometric elements and strain gauges.

Priborostroenie no.8:8-9 Ag '62. (MIRA 15:9)

(Dynamometer--Testing) (Strain gauges--Testing)

"APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134

1. The first part of the document is a list of the names of the individuals who were involved in the project. The names are listed in alphabetical order. The names are: [illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134

MIRONOV, A.P., insh.

Investigating the carburation process in swirl-chamber diesel
engines. [Trudy] MVTU no.83:93-115 '58. (MIRA 11:6)
(Diesel engine)

(11) 25/A

PHASE I BOOK EXPIRATION

SOV 304

Summary, Vysokaya tekhnicheskaya schkola

Problemy razvitiya i uchastniya v nauchno-tekhnicheskoy konferentsii...
safety "Vysokaya tekhnicheskaya schkola" VVO Leningrad. Increasing
the output and improving the economy of internal combustion engines. Reports
and Transactions presented at the Scientific and Technical Conference held
by the Department of Internal Combustion Engines, VVO Leningrad. Moscow,
March, 1979. 219 p. Errata slip inserted. 4,000 copies printed.

Ed.: A.M. Orlov, Doctor of Technical Sciences; Ed. of Publishing House
L.I. Voznesenskiy, Tech. Ed.: V.D. Khizid; Managing Ed. for literature
in Automotive, Tractor, and Agricultural Machine Building: L.M. Buzanov,
Engineer.

PURPOSE: This collection of articles is intended for scientific and engineering
personnel of research institutes and machine-building plants.

COVERAGE: The collection contains reports and papers dealing with better
economy and greater capacities for internal combustion engines. Experimental
results are stated and their effectiveness evaluated. The conference took
place in 1977. The introduction to the collection contains short summaries
of the articles. In parentheses are mentioned. References follow
several of the articles.

Chernin, M.A. [Doctor of Technical Sciences, VVO Leningrad]. Generalized
characteristics of turbocharger engines. 130
The author analyzes factors affecting the performance of turbocharger
engines. Indicated efficiency is computed, and methods of determining
performance coefficients are stated.

Butirskiy, A.L. [Engineer, MAZ]. Double exhaust as a device for increasing
coefficients of power output and economy in piston engines. 134
The author analyzes discharge coefficients for a four-stroke carburetor
engine with the flow of gases through both the exhaust valves and the
ports in the lower end of the cylinder. Comparison is made between
engines, designed for double exhaust, and the standard "push-in" engine.
The author concludes that double exhaust saves 10 percent more fuel.

Aganov, S.G. [Candidate of Technical Sciences, Dzerzh]. Measurement of Air
Flow Through Cylinders. 137

Kirov, A.P. [Engineer, MAZ]. Experimental study of mixture formation in
three-stroke combustion chambers. 139
The author reports on results of a study of the mixture-formation process
by means of high-speed photography.

Stolbovskiy, V.L. [Engineer, Tsk]. Some Research Done on Engines with
High S.P.M. Coefficients. 139
The author reports on tests and results obtained with high-s.p.m. engines.
and outlines some attempts to increase engine performance. The
fuel economy, six types of Soviet automotive engines, 1.1NA, 1.1M, 1.1M2,
1.2M, 1.2M2, and 1.5M are analyzed, and their specifications are given.

Legayev, N.L. [Engineer, VVO Leningrad]. Study of the gas exchange
process in a dynamic one stroke mode. 140
Ed.: M.A. [Engineer, MAZ]. Study of the interaction between two

MIRONOV, A.P., inzh.

Using a dynamic model of a swirl-chamber diesel in investigating
the mixing process. [Trudy] NATI no.19:32-53 '59.

(MIRA 12:9)

(Diesel engines--Testing)

BARSKIY, Igor' Borisovich, kand.tekhn.nauk, dotsent; LOMOVSKIY, Viktor Aleksandrovich, kand.tekhn.nauk, dotsent; KURBATOV, A.P., inzh., retsenzent; MINDEL', Ye.M., kand.tekhn.nauk, retsenzent; MIRCHOV, A.P., kand.tekhn.nauk, retsenzent; IVANOV, V.V., kand.tekhn.nauk, red.; FAL'KO, O.S., red.izd-vs; TIKHANOV, A.Ye., tekhn.red.

[Tractors] Traktory. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 295 p. (MIRA 14:1)

1. Lyuberetskiy tekhnikum sel'skokhozyaystvennogo mashinostroyeniya (for Kurbatov).

(Tractors)

MIRONOV, A.P., kand.tekhn.nauk

Calculating basic dimensions for swirl chambers. Trakt. 1 sel'khozmasb.
30 no.11:14-15 N '60. (MIRA 13:12)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Diesel engines)

MILONOV, A.P., inzh.

Mechanization and automatic control of heat treating process at
the Liubertsy Agricultural Machinery Plant. Metalloved. i term.
obr. met. no.4:9-13 Ap '61. (SEPA 14:3)
(Lyubertsy—Machinery industry) (Metals—Heat treatment)

KRIVENKO, P.M., kand.tekhn.nauk; MIRONOV, A.F., kand.tekhn.nauk

Special features of the starting operation of a tractor diesel engine. Trakt. i sel'khoz mash. 32 no.1:3-5 Ja '62. (MIRA 15:2)

1. Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy tekhnologicheskiy institut (for Krivenko). 2. Nauchno-issledovatel'skiy avtotraktornyy institut (for Mironov).

(Tractors)

MIRONOV, A.P., kand.tekhn.nauk; ALFIM'YEV, V.P., inzh.

Investigating the operating process of an air-cooled tractor diesel engine.
Trakt. i sel'khoz mash. 33 no.2:1-4 F '63. (MIRA 16:3)

1. Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy traktorny institut.
(Tractors—Engines)

MIRONOV, A.P., kand. tekhn. nauk; Efros, V.V., inzh.

Effect of the parameters of the injector spray tip on the indices of the D37M engine. Trakt. i sel'khoz mash. 33 no. 20-22 Je '63. (MIRA 16:7,

1. Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy traktorny institut (for Mironov). 2. Vladimirskiy traktorny zavod (for Efros)

(Tractors—Fuel systems)

S/119/62/000/003/005/009
D201/D303

11/17/70

AUTHORS: Borok, M.T., and Mironov, A.S.

TITLE: Gas analyzer for measuring very small concentrations of oxygen in hydrogen and helium

PERIODICAL: Priborostroyeniye, no. 3, 1962, 12 - 15

TEXT: The authors describe the construction and operation of an improved industrial gas-analyzer, developed at the SKB Analiticheskogo priborostroyeniya AN SSSR (SKB of Analytic Machine-Construction of the AS USSR) for measuring traces of oxygen in hydrogen or helium. The analyzer GL5103 (GL5103) consists of two parts: A continuously acting galvanic oxygen analyzer with a threshold sensitivity of about 10^{-6} % O_2 and an enricher, analogous to that of an existing AKU (AKSh) analyzer, but much more efficiently used. The analyzed gas is fed to the instrument through a control valve and if enrichment is used, it is applied at 15 - 30 l/min to the enricher, in which it goes consecutively through a spiral tube, adsorber, heating loop, throttle, locking valve, a flowmeter, and a gas counter. The adsorber consists of 60 cm³ of silica-gel. the spiral
Card 1/3

Gas analyzer for measuring very ...

S/119/62/000/003/005/002
D201/D303

tube and adsorber may be placed either in a Dewar vessel with liquid nitrogen (adsorption) or in a vessel with boiling water (desorption). The gas is simultaneously fed into the analyzer and either directed into the spiral tube or into the heating loop. In the analyzer the gas goes consecutively through a locking valve, a collector consisting of a humidifier, electrolyzer and a camera with the galvanic element and flowmeter. The collector, made of organic glass, has a silver cathode. The filtering paper is impregnated with KOH. Oxygen in the mixture diffuses at the cathode into the electrolyte and produces an electrochemical reaction, inducing in the galvanic cell a current proportional to its concentration in the analyzed gas. The sensitivity is very high: With a cathode surface of 250 - 300 cm² it is possible to obtain 12 - 13 microamps/10⁻⁴ O₂, depending on the concentration of electrolyte. It was found that with heating the adsorber, oxygen desorption shows a marked peak; coinciding basically with the chromatograph of one component which makes determination easy. The peak parameters depend on the direction of the displacement of the temperature field in the adsorber and on the stream of desorbed gas from the adsorber into the

Card 2/3

... analysis; for periodic analysis $0 - 5 \times 10^{-4}$...
 old sensitivity of 2×10^{-4} ...
 thus enough to raise ...
 2 - 3 mins. only. There are ...

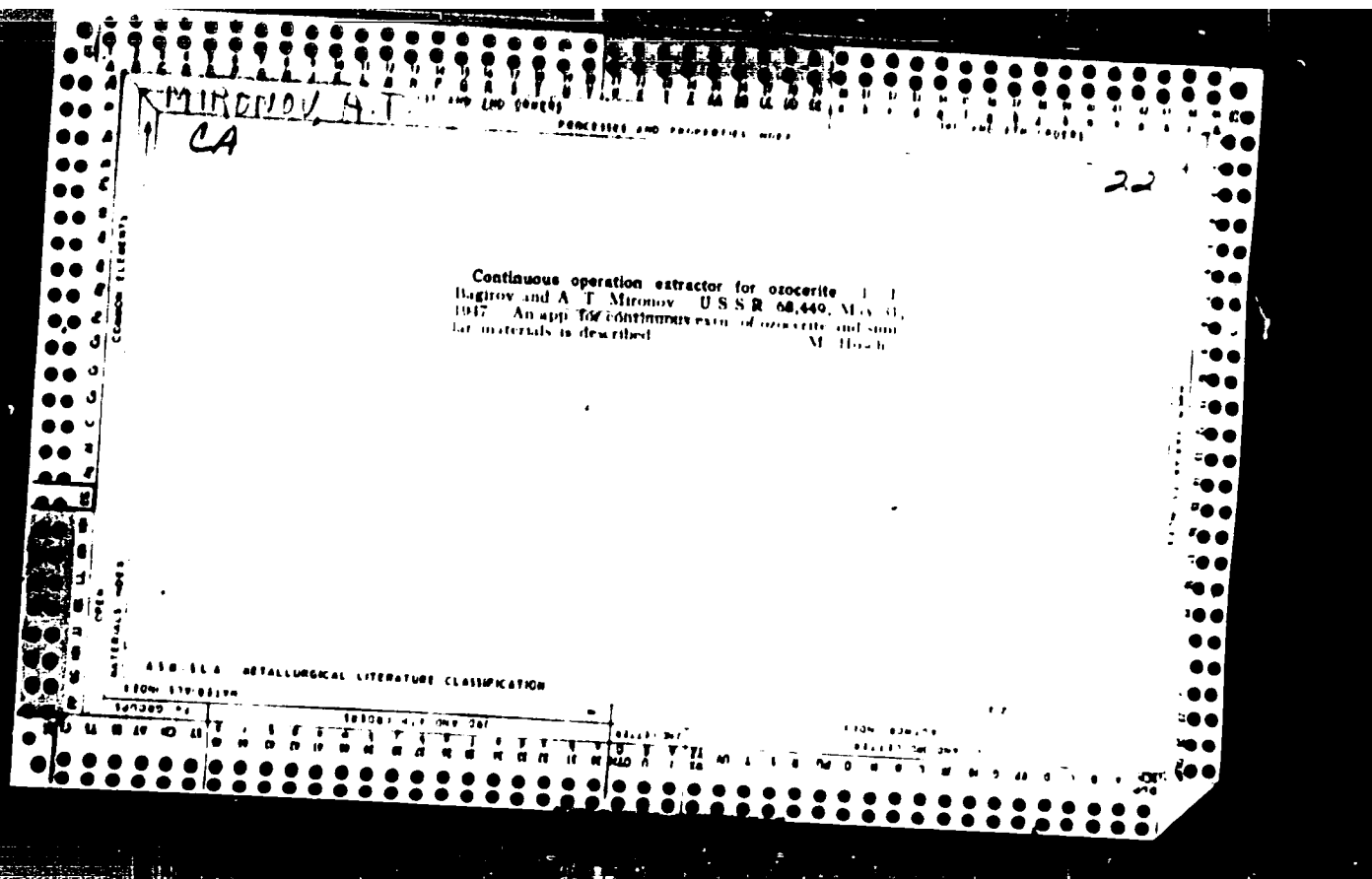
Card 5/3

"APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134

APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134



MIRONOV, A.T.

Marine electric currents and the effect of these currents on fishes.
Trudy MOI 1:56-74 '48. (MLRA 7:5)
(Marine fauna) (Oceanography) (Electric currents)

Mar/Apr 1948

USSR/Hydrology

Oceanology

Earth - Electrical Properties

"Survey of the Condition of the Electrical Current in the Black Sea (South Shore of Crimea) from May 1946 to March 1947," A. T. Mironov, Black Sea Hydrophys Sta, Acad Sci, USSR, 9 pp

"Izv Akad Nauk SSSR, Ser Geograf i Geofiz" Vol XII, No 2

Compares values obtained by observations on the distance of potential between two points in the Black Sea and values as estimated by the Institute of Terrestrial Magnetism. Shows the relation between the

41553

USSR/Hydrology (Contd)

Mar/Apr 1948

electrical current in the Sea and the strength of the charge of terrestrial magnetism. Shows that amplitude of the current varies with the appearance of sunspots, or polar lights. Submitted by Academician V. V. Shuleykin, 16 May 1947.

MIRONOV, A. T.

41553

Also reported in: ~~USSR~~ Trs 4-2039, 11 Mar 53

USSR/Physics - Instruments, Marine 11 Feb 50

"Marine Measuring Instruments," A. T. Mironov

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 825-827

Although tests in 1936 showed that measuring elec-

trodes from lead sulfate could be used for sea studies, Mironov hoped still better electrodes might be obtained if lead was covered not only with sulfate layer but with complex of lead salts which might be deposited on lead by electrolysis in sea water. Experiments in obtaining such coverings were made recently in Black Sea Dept, Marine Hydrophys Inst, Acad Sci USSR. Four lead plates were made from cable sheath and treated

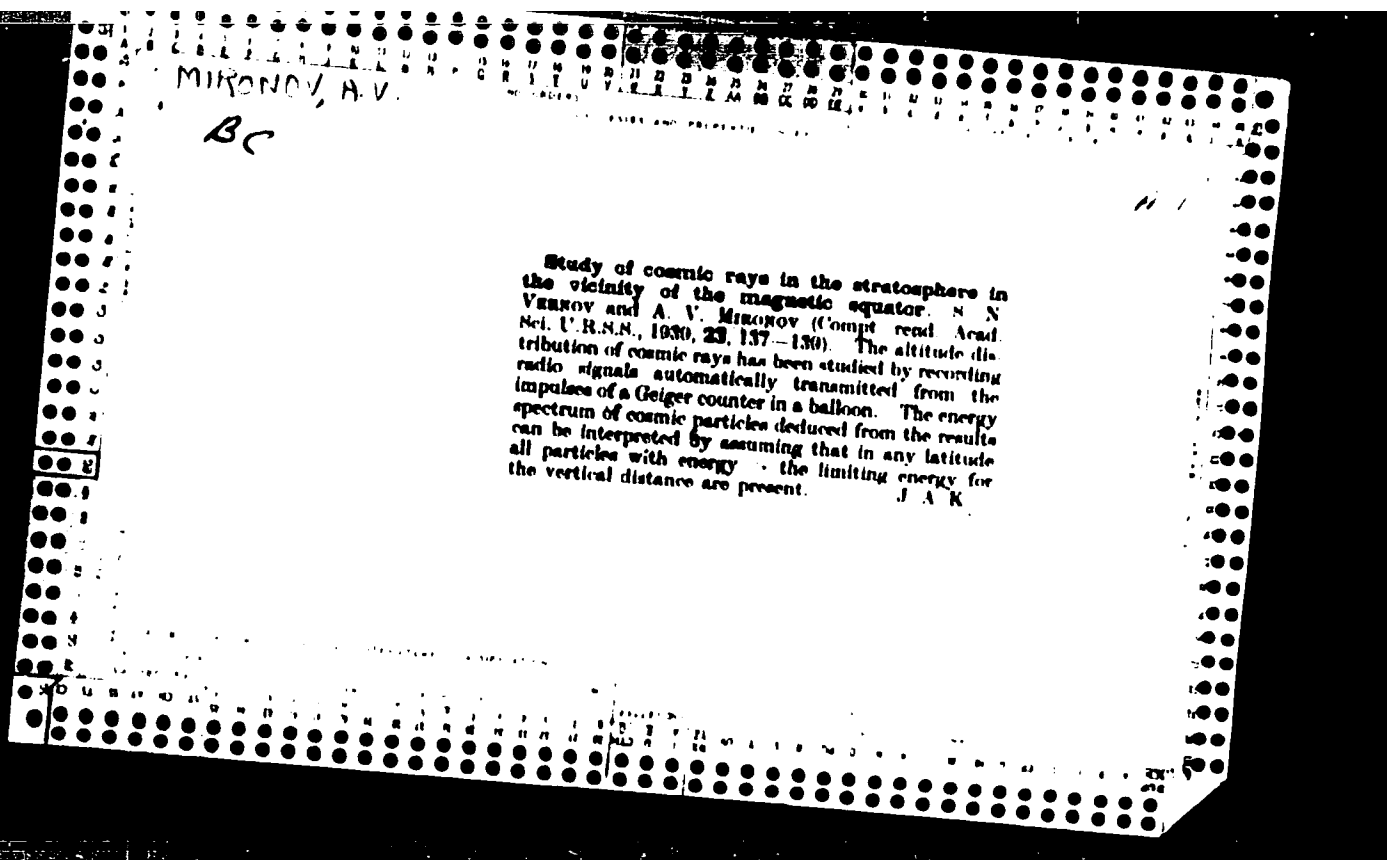
165761

USSR/Physics - Instruments, Marine 11 Feb 50
(Contd)

with alternating current in sea-water bath. Current of 1.5 amp, 50 cycles (100 v) was used with current density of 0.04 amp per sq cm of electrode surface. Treatment was made in four steps of following duration: 1st, 6 hr; 2d, 12 hr; 3d, 22 hr; over-all, 40 hr. Table gives potential difference of the two pairs of plates after each treatment. Potential difference for one pair treated. Potential difference close to zero for 3 days, varying only by 0.2 millivolt. Submitted 7 Dec 49 by Acad V. V. Shuleykin.

165761

Also reported in: Trans. Canada, Ref. Res. Bd. Sci. Ind.
Rohr - T-442, 28 Aug 51 (674102)



MIRONOV, A. .V.

Fotometrirovaniye sumerechnogo sveta fotoelektricheskim metodom (Photometric study of
Twilight by the Photoelectric Method). Akademiya Nauk SSSR. Izvestiya. Seriya geofiz.
i geofiz., 1940, no. 6, p. 843-848, diagrs., table, 4 refs. Summary in German.

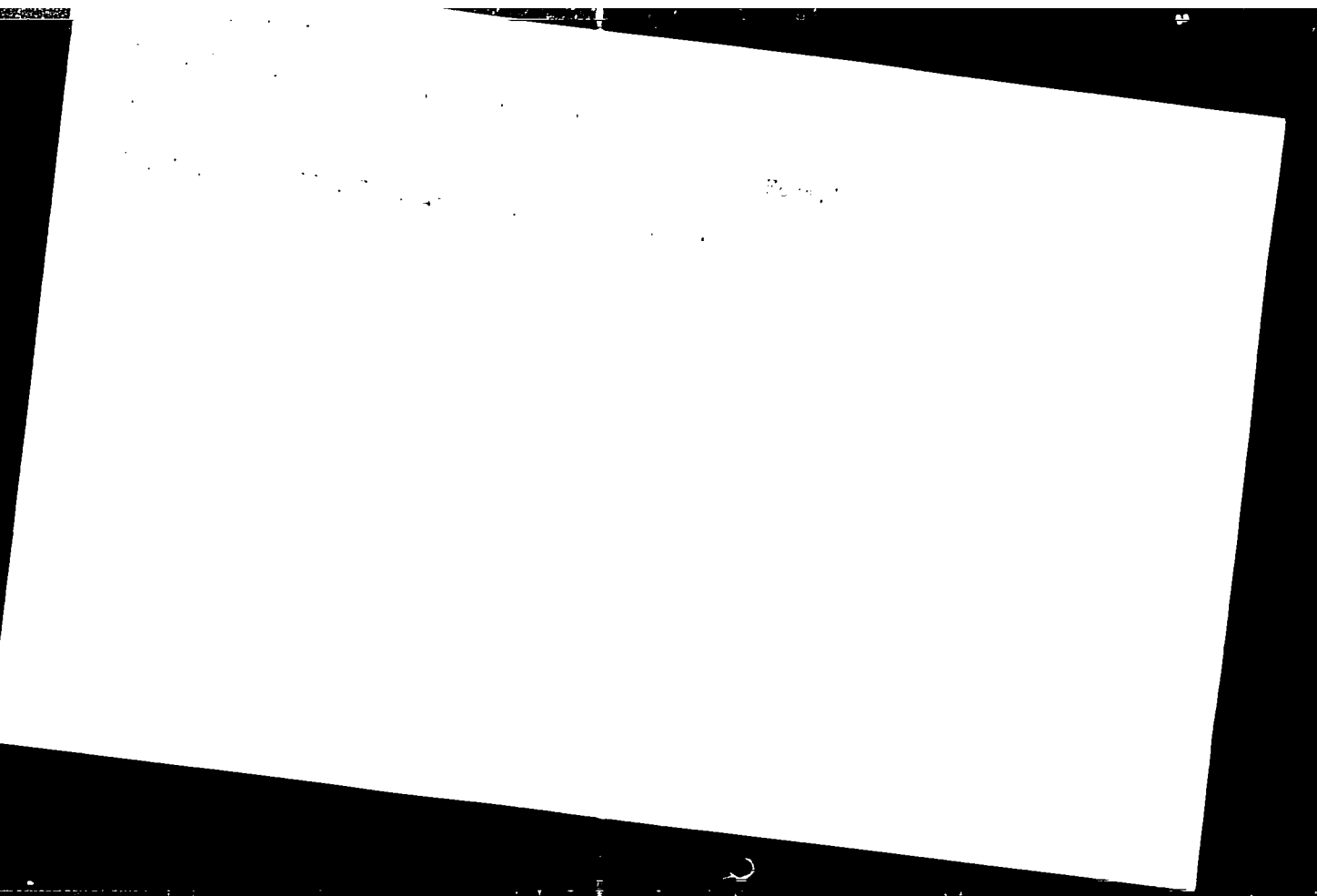
AS262.A6246 1940

INTERVIEW, A.V.
1950

1841
On the Connection between the Anomalies of
Polarization of Half-light and the State of Ionization
A. M. Kiselevsky, A. A. Mironov, L. M.
Mikhalevich, A. M. Morozov, Z. F. Ostrovsky,
S. I. Sokolov & I. A. Khramov. *Journal of
Physics*, Vol. 20, No. 10, 1955, pp. 100-104.
English. According to Rayleigh's theory of
molecular scattering, the degree of polarization of
half-light (dawn and twilight) should decrease
uniformly with ϕ the zenithal distance of the sun
according to $P = (1 - \cos^2 \phi) / (1 + \cos^2 \phi)$, but in
fact the polarization shows a well marked minimum
that may be attributable to effects of the ionized
layers. The experiments described (simultaneous
measurements of polarization and of critical frequency
of pulsed radio transmissions) were carried out to
find whether there was any correlation between
ionization and the degree of anomalous polarization.
A comparison between the observed decreases of
polarization from the theoretical values and the
corresponding critical frequencies show that there
is such a correlation, i.e. the maximum decrease is
associated with the highest critical frequency.

"APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134



APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001134

W. J. V. 41

1. The first part of the document is a letter from the
author to the editor. The letter is dated 10/10/64 and is
addressed to the editor of the "Journal of the
American Medical Association". The letter is signed
by the author, W. J. V. 41.

2. The second part of the document is a letter from the
editor to the author. The letter is dated 10/10/64 and is
addressed to the author, W. J. V. 41.

MIRONOV, A. V.

"Method of Sounding the Atmosphere With A Searchlight Beam Under Daylight Conditions." Sub 12 Mar 47, Inst of Theoretical Geophysics, Acad Sci USSR

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sun No. 457, 18 Apr 55

MIROMOV, A. V., GALPERIN, Y. I. and SHEFOV, N. N.

"Spectographs for the Study of Atmospheric Emission During the I.G.Y. of 1957-1958," paper read at the 7th International Astrophysical Colloquium, Liege, 12-14 Jul 1956.

A short description of spectographs of large focal ratios for studies of the night sky emission and aurorae is given.

SO: 568946

MIROMOV, A.V.; SHEPOV, N.N.

Observation of the auroral spectrum near Moscow. Astron.zhur.
33 no.5: 715-716 S-O '56. (MLRA 9:12)

1. Institut fiziki atmosfery Akademii nauk SSSR.
(Auroras--Spectra)

MIRONOV, A. V.

5
Spectrographs to be used for investigations of atmospheric emission during the International Geophysical Year of 1957-58. Q. I. Galperin, A. V. Mironov, and N. N. Shchep-
Mém. soc. roy. sci. Liège 18, 68-9 (1957). — A short descrip-
tion of 3 spectrographs which will be used for upper atmo-
spheric investigations during the International Geophys. Year.
These instruments will cover the spectral region from 8000 Å.
to 11,000 Å.
Harry C. Allen, Jr.

pc
ay

82

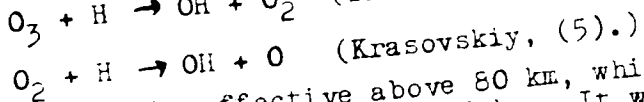
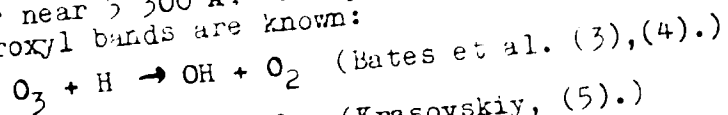
33-3-16/32

AUTHOR: Mironov, A.V. and Prokudin, V.S.

TITLE: The identification of the emission of the night sky at about 5 300 Å (Ob otozhdestvlenii emissii nochnogo neba okolo 5 300 Å)

PERIODICAL: "Astronomicheskiy Zhurnal" (Journal of Astronomy), 1957, pp. 440 - 441, Vol. 34, No. 3, (U.S.S.R.)

ABSTRACT: Koomen et al. (1) have shown that the emission near 5 300 Å originates at a height of 80 to 150 km, with a maximum intensity at about 100 km. Earlier, Hunaerts and Nicolet (2) suggested that bands 6 - 0 and 9 - 2 of hydroxyl in the ground state should occur near 5 300 Å. Two possible mechanisms of excitation of hydroxyl bands are known:



The first of these cannot be effective above 80 km, whilst the second should have a maximum at about 100 km. It would therefore appear that Koomen's results support the second alternative.

Card 1/2

Observations carried out by the present authors in favourable atmospheric conditions support the hypothesis that the

33-3-16/32

The identification of the emission of the night sky at about 5 300 Å. (Cont.)

emission at 5 300 Å belongs to the oscillation spectrum of hydroxyl in the ground state.

Acknowledgement is expressed to V.I. Krasovskiy for his comments.

There are 1 table and 5 references, 1 of which is Slavic.

ASSOCIATION: Zvenigorod Scientific Station of the Institute of Physics of the Atmosphere Ac.Sc., U.S.S.R.
(Zvenigorodskaya Nauchnaya Stantsiya Instituta Fiziki Atmosfery AN SSSR)

SUBMITTED: September 8, 1956.

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Mironov, A. V., Prokhorova, V. G. and Shestopalov, A. G.

TITLE: Low Latitudinal Polar Aurora January 21-22, 1950

(Nizkoshirotnoye polarnoye svyazaniye 21-22 Yanvarya 1950 g.)

PERIODICAL: Izvestiya akademii nauk SSSR, Seriya geofizicheskaya
1950, Nr 12, pp 1514-1516 and 1 plate (USSR)

ABSTRACT: A strong magnetic storm took place during the night of January 21-22, 1950. A series of observations were made at the Institute of Atmospheric Physics at its station near Moscow. The aurora spread from 15° above the horizon shortly after midnight (Fig. 1) to 70° during one hour (Fig. 1 and 3). The photographs of the spectrum directed at 45° were taken, which show the lines of oxygen, nitrogen and hydrogen (Figs 4 and 5). The data are shown in the table on p 1514 in the following order: identification λ measured λ theoretical, transition, intensity (spectrum 1 and 2) blended bands and their intensities. The determination of H_g was very complicated due to the interference in the bands 6.3 and 7.4.

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SOV/ 49-55-11-12/17

Low Latitudinal Polar Aurora January 21-22, 1957

However, it was possible to establish its velocity as $v = \pm 500$ km/sec, and the maximum intensity 3.4. There are 5 figures, 1 table and 4 references; 2 of the references are Soviet and 2 are English.

ASSOCIATION: Akademiya nauk SSSR, institut fiziki atmosfery, Zvenigorodskaya nauchnaya stantsiya (Academy of Sciences, USSR, Institute of Physics of the Atmosphere, Zvenigored Scientific Station)

SUBMITTED: December 2, 1957.

Card 2/2

THE OBSERVATION OF THE AURORA OF 10-11
FEBRUARY 1958, NEAR MOSCOW

by
A. V. Mironov, V. S. Prokudin and K. R. Shelov

ABSTRACT

The results of treatment of the auroral spectrograms in the regions 6000-8000, 8000-8500, 8500-11000 obtained on 10-11 February 1958 at the Chelmsford station are reported.

Strong enhancement of the emission at 11000 Å is registered as compared to the usual intensity of the emission of the O^+ band. This enhancement is apparently due to the appearance of the He^+ emission.

Spectral, Electrophotometric and Radar Research on Auroras and Night Airglow, edited

by V. I. Shchegolev, Moscow, Izdatel'stvo Akad. Nauk SSSR, 1959.

~~Copyright - The auroral emission field was observed by the individual
of the Chelmsford station on 10-11 February 1958. The
data were obtained by the use of the Chelmsford station
the USSR by the Council of the Academy of Sciences of the USSR.~~

Spectral, Electrophotometrical and Radar Researches of Auroras and Airglow
Published by the Soviet National IZ Committee, June 1959

examines. Apparently this is the first of a series to be published on Section IV of the MIT program (Auroras and Airglow). The publication includes the following articles:

²Hydrogen Emission and Two Types of Auroral Spectra, ^o by
V. G. Kalpala.

"Auroral Observations on 10-11 Feb 58, Absence" by AV
Elmquist, VS Prohaska, and ED Sheffer.

“Transmissions of Snow Twilight and Night Airglow Emissions.”
by H. Shuford.

*Electrophysiological Measurements in the Auroral Zone,
by IV Pojila. N V DZINORDZIN

²⁰An Attempt of Interferometrical Study of Auroral Emission Lines, by TR. Mularchik. *NOVAYA CHEZ. N. Y. 1960*

Observations of the Line
Spectra,* by 73 Airplane
6562 A in the Night Airglow

These results of investigations of Aurooral and Sight Airglow
feature, by Dr. H. J. J. J. J.

WALSH

84576

S/O 35/60/000/009/004/016
A001/A001

3.1810

Translation from Referativnyy zhurnal Astronomiya i Geodeziya 1968, No. 1,
p. 58 # 9074

AUTHORS Mironov, A.V., Prokudina, V.S., Shefov, N.N.

TITLE The Observation of Aurora Polar on February 10-11, 1968 near
Moscow

PERIODICAL V sb. Spekt. elektrofotometr. i radiatsiya issled. p. lyarn
sivaniy i svecheniya nochn. neba No. 1, Moscow, AN SSSR 1968
pp. 20-24 (Engl. summary)

TEXT The authors describe the aurora polaris on February 10-11, 1968
which was characterized by a high brightness and a large gl w area, as well as
by a brief appearance of a radiative arc in zenith. The aurora polaris was ac-
companied with a strong magnetic storm. The spectra of this aurora polaris at
cands $\lambda\lambda$ 3,400-6,600 (dispersion ~ 85 A/mm), $\lambda\lambda$ 8,000-9,400, 9,800-11,200 (dis-
persion ~ 150 A/mm) and $\lambda\lambda$ 3,500-6,600 (dispersion ~ 320 A/mm) were obtained at
the Zvenigorod station of the Institut fiziki atmosfery (Institute of Physics of

Card 1/2

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S/O 35/60/000/000/1/04/015

A001/A001

The Observation of Aurora Polaris on February 10-11, 1958, near Moscow

Atmosphere of AS USSR. A spectrogram exposed from 10.35^m to 10.40^m was obtained. Emissions were discovered in the spectrum, characteristic for an intense low latitude aurora, pertaining to N_2^+ , NI, NII, OI, OII. A characteristic feature of this spectrum is the absence of the first and second positive nitrogen systems which are often observed in spectra of high-latitude auroras, and a clear display of atomic lines over the background. Relative intensities of emissions are presented. R, Q and F-branches of the OH-band (5,2) are seen on the spectrogram. In this aurora, the line $\lambda 10,830$ (Q-branch) is more intense than the R-branch by 1.5 times, their ratio exceeds by a factor of 3 the mean ratio between the Q and R-branches in the night sky spectrum. It can be concluded from the R-branch of the OH-band and from other bands of OH, such as (4,1), (4,2), (5,1), (5,2) and (6,1), that hydroxyl emission in this spectrum is weaker in comparison with other nights. The authors assume that there is an emission in the line $\lambda 10,830$, which is connected with the aurora polaris and caused by the emission of HeI (2³S - 2¹P transition), from the 20.87 eV level. The profile of emission $\lambda 10,830$ is given, its half width coincides with the instrumental one and is equal to 4 Å. There are several features.

Translator's note: This is the full translation of the original Russian article. Card 2/2

MANN, A.K.; MIROMOV, A.V.; LEMINA, N.F.

Determining the location of insulation damage in long cable lines.
(MIRA 13:2)

Izv. NIPT no.4:49-64 '59.

(Electric insulators and insulation)

(Electric cables)

2700
S/169/62/000/04/095/103
D290/D302

3.1810

AUTHOR: Mironov, A.V.

TITLE: Electrophotometric measurements of the nightglow

PERIODICAL: Referativnyi zhurnal. Geofizika, no. 4, 1962, 25, ab-
stract 43148 (V sb. Elektr. elektrofotometr. i foto-
lokats. issled. polyn. siyaniy i svcheniya nochn.
neta., no. 6, M., AN SSSR, 1961, 12-16)

TEXT: The OI lines at 5570 Å and 6300 Å, and the NaI line at 5893 Å in the nightglow spectrum were studied electrophotometrically in the Soviet Union during the IGY. Complete and systematic observations were made at the Abastumanskaya astrofizicheskaya observatoriya AN Gruz SSR (Abastuman Astrophysical Observatory, AS USSR), the Krymskaya astrofizicheskaya observatoriya AN SSSR (Crimean Astrophysical Observatory AS USSR), and the Zvenigorodskaya nauchnaya stantsiya IFA AN SSSR (Zvenigorod Scientific Station IFA AS USSR). Non-standard electrophotometers were used; interference filters were used to separate different parts of the spectrum. The observations were made in accordance with the instructions issued to all Card 1/4

Electrophotometric measurements of ... S/163/62/100/ 04/05/103
D230/D202

international stations taking part in the program of electrophotometry of the night sky during the IGY; thus, the brightness of the zenith on cloudless and moonless nights was recorded at the beginning of each hour for the following wavelengths: about 5500, 5577, 5893 and 6300 Å. The results were processed following the same instructions. The continuous background emission at the wavelengths of the lines was calculated from the background at about 5500 Å by assuming that the background intensity varies in the same way as the intensity of a class G2 star. The following information was recorded: the background intensity at about 5300 Å (I_{5300}), the intensities of the oxygen lines at 5577 and 6300 Å (I_{5577} and I_{6300}), and the intensity of the sodium line at 5893 Å (I_{5893}). Measurements were also made at Abastuman of the background at about 5550 Å (I_{5550}) and the intensity in the region 9000 - 10500 Å (I_{OH}), which was assumed to correspond to an OH emission band. The information from the stations is distributed irregularly and differently over the months. Graphs of the variations of the measurements during the

Card 2/4